

# In the United States Court of Federal Claims

No. 16-909

Filed: September 6, 2017

\*\*\*\*\*

BEACON ADHESIVES, INC.,

Plaintiff,

v.

THE UNITED STATES,

Defendant.

\* 28 U.S.C. § 1498(a);  
\* 35 U.S.C. § 112;  
\* Claim Construction;  
\* Extrinsic Evidence;  
\* Intrinsic Evidence;  
\* Manual Of Patent Examining  
Procedure (“MPEP”) § 2112.02  
\* Process Claims;  
\* Rule of the United States Court of  
Federal Claims (“RCFC”) 40.1.

\*\*\*\*\*

**Joseph J. Zito**, DNL Zito, Washington, D.C., Counsel for Plaintiff.

**Walter W. Brown**, United States Department of Justice, Civil Division, Washington, D.C., Counsel for the Government.

## **MEMORANDUM OPINION AND ORDER CONSTRUING CERTAIN CLAIMS OF UNITED STATES PATENT NO. 7,032,492**

**BRADEN**, *Chief Judge*.

To facilitate review of this Memorandum Opinion and Order construing certain claims of United States Patent No. 7,032,492, the court has provided the following outline:

**I. THE PATENT AT ISSUE.**

**II. PROCEDURAL HISTORY.**

**III. DISCUSSION.**

**A. Jurisdiction.**

**B. Standing.**

**C. Controlling Precedent Concerning Construction Of Patent Claims.**

**1. The Person Of Ordinary Skill In The Art.**

**2. A Federal Trial Judge Should First Examine Intrinsic Evidence.**

**a. The Claims.**

**b. The Specification.**

**c. The Prosecution History.**

**3. A Federal Trial Judge May Examine Extrinsic Evidence, But Only In Limited Circumstances.**

**IV. THE COURT'S CONSTRUCTION OF CERTAIN PATENT CLAIMS TERMS REQUESTED BY THE PARTIES.**

**A. United States Patent No. 7,032,492.**

**1. Claim 1.**

**B. Construction Of The Disputed Terms.**

**1. "A Joint Between The Projectile And The Casing."**

**a. Plaintiff's Proposed Construction.**

**b. The Government's Proposed Construction.**

**c. The Court's Resolution.**

**2. "Not Capillarily Active At The Joint."**

**a. Plaintiff's Proposed Construction.**

**b. The Government's Proposed Construction.**

**c. The Court's Resolution.**

**3. "Not Anaerobically Curing."**

**a. Plaintiff's Proposed Construction.**

**b. The Government's Proposed Construction.**

**c. The Court's Resolution.**

**V. CONCLUSION.**

## I. THE PATENT AT ISSUE.<sup>1</sup>

On April 25, 2006, the United States Patent and Trademark Office (“USPTO”) issued U.S. Patent No. 7,032,492 (the “‘492 patent”), a patent on “Ammunition Articles Comprising Light-Curable Moisture-Preventative Sealant And Method Of Manufacturing Same.” Compl. ¶ 13. Mr. Milton Meshirer, the inventor of the ‘492 patent, assigned the ‘492 patent to Beacon Adhesives, Inc. (“Beacon Adhesives”). Compl. ¶ 3.



Pl. Br. at 7 (depicting cut-away from assembled munition).

## II. PROCEDURAL HISTORY.

On August 1, 2016, Beacon Adhesives (“Plaintiff”) filed a Complaint in the United States Court of Federal Claims alleging that the Department of Defense infringed the ‘492 patent. ECF No. 1. On that same day, the case was assigned to the Honorable Judge Marion Blank Horn. ECF No. 2.

---

<sup>1</sup> The facts cited and discussed herein were derived from: Plaintiff’s August 1, 2016 Complaint (“Compl.”) and attached Exhibit (“Compl. Ex. 1”); Plaintiff’s June 26, 2017 Opening Claim Construction Brief Exhibits (“Pl. Br. Ex. 1–2”); the Government’s June 26, 2017 Claim Construction Brief Exhibit (“Gov’t Br. Ex. 1”); and Transcripts of the Claim Construction Hearing held on March 17, 2017, in Washington, D.C. (“3/17/17 Tr. 1–96”).

On August 23, 2016, the case was reassigned to the undersigned judge, pursuant to Rule 40.1 of the Rules of the United States Court of Federal Claims (“RCFC”).<sup>2</sup> ECF No. 5. On November 29, 2016, the Government filed an Answer. ECF No. 8. On January 23, 2017, the parties filed a Joint Preliminary Status Report. ECF No. 10. On January 27, 2017, the court held a telephonic status conference. On February 13, 2017, the court granted a Protective Order to safeguard the confidentiality of “competition sensitive or otherwise protectable” information. ECF No. 14.

On March 14, 2017, the Government filed a Claim Construction Chart And Appendix that included, the Government’s proposed constructions and supporting attachments. ECF No. 16.

On March 17, 2017, the court held a Claim Construction Hearing at the Howard T. Markey National Courts Building, 717 Madison Place, Northwest, Washington, D.C., 20439.

On April 17, 2017, the Government filed a Preliminary Proposed Claims Chart And Briefing Schedule, pursuant to the March 17, 2017 Claim Construction Hearing. ECF No. 20. On that same day, Plaintiff filed a Notice Of Clarification Regarding [] Claim Chart, disagreeing with the Government’s April 17, 2017 Preliminary Claims Chart on the construction of claim 7, and proposed briefing schedule. ECF No. 21.

On April 19, 2017, the court entered a Scheduling Order for claim construction and response briefing. ECF No. 22.

On June 26, 2017, Plaintiff filed an Opening Claim Construction Brief (“Pl. Br.”). ECF No. 25. On that same day, the Government filed a Brief On Claim Construction (“Gov’t Br.”). ECF No. 24. On July 10, 2017, Plaintiff filed a Responsive Claim Construction Brief (“Pl. Resp. Br.”). ECF No. 27. On that same day, the Government filed a Response Brief (“Gov’t Reply Br.”). ECF No. 26.

### **III. DISCUSSION.**

#### **A. Jurisdiction.**

The United States Court of Federal Claims has jurisdiction to adjudicate claims alleging that “an invention described in and covered by a patent of the United States is used

---

<sup>2</sup> RCFC 40.1, in relevant part, provides:

Transfer. To promote docket efficiency, to conform to the requirements of any case management plan, or for the efficient administration of justice, the assigned judge either on the party’s motion or on the court’s own initiative, may order the transfer of a case to another judge upon the agreement of both judges.

RCFC 40.1(b).

or manufactured by or for the United States without license of the owner thereof or lawful right to use or manufacture the same . . . [seeking] recovery of . . . reasonable and entire compensation for such use and manufacture.” 28 U.S.C. § 1498(a).

The August 1, 2016 Complaint alleges that the Department of Defense and other agencies, without license or lawful right to use or manufacture the same, infringed the patented process covered by the ’492 patent. Compl. at ¶ 4. Therefore, the court has determined that the August 1, 2016 Complaint properly invokes the court’s jurisdiction, pursuant to 28 U.S.C. § 1498(a), authorizing the United States Court of Federal Claims to adjudicate claims of patent infringement against the federal government.

## B. Standing.

“Standing is a threshold jurisdictional issue.” *Myers Investigative & Sec. Servs. v. United States*, 275 F.3d 1366, 1369–70 (Fed. Cir. 2002). “The party invoking federal jurisdiction bears the burden of establishing the[ ] elements [of standing].” *Lujan v. Defs. of Wildlife*, 504 U.S. 555, 561 (1992).

“A patentee shall have remedy by civil action for infringement of his patent.” 35 U.S.C. § 281; *see also* 35 U.S.C. § 100(d) (“The word ‘patentee’ includes not only the patentee to whom the patent was issued but also the successors in title to the patentee.”); *see Tyco Healthcare Grp. LP v. Ethicon Endo-Surgery, Inc.*, 587 F.3d 1375, 1378 (Fed. Cir. 2009) (the United States Court of Appeals for the Federal Circuit has determined that in order “[t]o assert standing for patent infringement, the plaintiff must demonstrate that it held enforceable title to the patent at the inception of the lawsuit.”).

The standard set forth by the United States Supreme Court over a century ago in *Waterman v. Mackenzie*, 138 U.S. 252 (1891) still governs:

There can be no doubt that he is “the party interested, either as patentee, assignee, or grantee,” and as such entitled to maintain an action at law to recover damages for an infringement; and it cannot have been the intention of [C]ongress that a suit in equity against an infringer to obtain an injunction and an account of profits, in which the court is authorized to award damages, when necessary to fully compensate the plaintiff, and has the same power to treble the damages as in an action at law, should not be brought by the same person.

*Id.* at 260–61 (internal citations omitted).

The August 1, 2016 Complaint alleges, *inter alia*, that: 1) the USPTO issued the ’492 patent to Milton Meshirer, and he assigned it to Beacon Adhesives; 2) the United States manufactured bullets and munitions using the process in the ’492 patent; 3) the United States directly or through its contractors, including Alliant Technology Systems and Heron Manufacturing, Inc., manufactures bullets and other munition using a process that infringes the ’492 patent; 4) the United States has procured, or procures, from others, infringing bullets, munitions, and munition sealants manufactured according to the process protected by the ’492 patent; and 5) the United States is without license of the owner thereof

or lawful right to use or manufacture the invention covered by the '492 patent. Compl. at ¶¶ 1–34.

The facts alleged in the August 1, 2016 Complaint state a patent infringement claim that is plausible on its face and alleges more than the mere possibility of potential liability. *See Ashcroft v. Iqbal*, 556 U.S. 662, 678 (2009) (“[A] complaint must contain sufficient factual matter, accepted as true, to ‘state a claim to relief that is plausible on its face.’”).

For these reasons, the court has determined that Plaintiff has standing to seek an adjudication of the claims alleged in the August 1, 2016 Complaint.

### **C. Controlling Precedent Concerning Construction Of Patent Claims.**

In *Markman v. Westview Instruments, Inc.* (“*Markman III*”), 517 U.S. 370 (1996), the United States Supreme Court unanimously affirmed the *en banc* decision of the United States Court of Appeals for the Federal Circuit in *Markman v. Westview Instruments, Inc.* (“*Markman II*”), 52 F.3d 967 (Fed. Cir. 1995) (*en banc*), holding that the meaning and scope of a patent’s claims are issues of law to be determined by a federal trial judge. *See Markman III*, 517 U.S. at 372. When conducting patent claim construction, federal trial judges should seek to give any disputed claim term its “ordinary and customary meaning,” that is “the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, *i.e.*, as of the effective filing date of the patent application.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005).

The significance of *Markman III* is that the United States Supreme Court afforded considerable deference to the appellate court’s analysis in conducting claim construction. *See Markman III*, 517 U.S. at 390 (“It was just for the sake of such desirable uniformity that Congress created the [United States] Court of Appeals for the Federal Circuit as an exclusive appellate court for patent cases, H.R. Rep. No. 97–312, at 20–23 (1981), observing that increased uniformity would ‘strengthen the United States patent system in such a way as to foster technological growth and industrial innovation.’”).

The court now turns to that analysis.

#### **1. The Person Of Ordinary Skill In The Art.**

As a threshold matter, a federal trial judge is required to examine patent claim terms and phrases from the perspective of a person of ordinary skill in the art (“POSITA”). *See Markman II*, 52 F.3d at 986 (“[T]he focus in construing disputed terms in claim language . . . is on the objective test of what one of ordinary skill in the art at the time of the invention would have understood the term to mean.”); *see also Shire Dev., LLC v. Watson Pharm., Inc.*, 787 F.3d 1359, 1364 (Fed. Cir. 2015) (holding that a federal trial judge is required to afford claim terms “their ordinary and accustomed meaning as understood by one of ordinary skill in the art.”); *Phillips*, 415 F.3d at 1313 (“The inquiry into how a person of ordinary skill in the art understands a claim term provides an objective baseline from which to begin claim interpretation.”). This requirement is “based on the well-settled understanding that inventors are typically persons skilled in the field of the invention and

that patents are addressed to and intended to be read by others of skill in the pertinent art.” *Phillips*, 415 F.3d at 1313.

A determination of the POSITA is a “basic factual inquir[y],” *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966), and,

[f]actors that may be considered in determining the ordinary level of skill in the art include: 1) the types of problems encountered in the art; 2) the prior art solutions to those problems; 3) the rapidity with which innovations are made; 4) the sophistication of the technology; and 5) the educational level of active workers in the field.

*Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 666–67 (Fed. Cir. 2000).

After ascertaining the POSITA, federal trial judges next determine the “ordinary and customary meaning” of the disputed claim terms. In doing so, a distinction must be drawn between intrinsic and extrinsic evidence.

## **2. A Federal Trial Judge Should First Examine Intrinsic Evidence.**

“In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.” *Phillips*, 415 F.3d at 1314. In many cases, however, “the meaning of a claim term as understood by persons of skill in the art is often not immediately apparent” and federal trial judges should “look[] to ‘those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean.’” *Id.* (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004)). “Those sources include ‘the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.’” *Phillips*, 415 F.3d at 1314 (quoting *Innova/Pure Water, Inc.*, 381 F.3d at 1116). Although federal trial judges may rely on each of these sources of evidence, the United States Court of Appeals for the Federal Circuit has outlined an analytical framework prioritizing some sources over others. *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 862 (Fed. Cir. 2004) (“Under this approach to claim construction, evidence extrinsic to the patent document ‘can shed useful light on the relevant art,’ but is less significant than the intrinsic record in determining the ‘legally operative meaning of disputed claim language.’” (quoting *Vanderlande Indus. Nederland BV v. Int’l Trade Comm’n*, 366 F.3d 1311, 1318 (Fed. Cir. 2004))); *see also Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996) (“Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language.”).

In particular, the United States Court of Appeals for the Federal Circuit has instructed federal trial judges to begin by examining “intrinsic evidence,” because it is the “most significant source of the legally operative meaning of disputed claim language.” *Gillette Co. v. Energizer Holdings, Inc.*, 405 F.3d 1367, 1370 (Fed. Cir. 2005). The forms

of intrinsic evidence include the “claims, the specification and, if in evidence, the prosecution history.” *Vitronics Corp.*, 90 F.3d at 1582 (citing *Markman II*, 52 F.3d at 979).

Within the forms of intrinsic evidence, however, the United States Court of Appeals for the Federal Circuit has established a hierarchy of consideration for the court to follow. *See Vitronics Corp.*, 90 F.3d at 1582–83 (“First, we look to the words of the claims themselves . . . second, it is always necessary to review the specification . . . [and] [t]hird, the court may also consider the prosecution history of the patent . . .”).

#### **a. The Claims.**

The claims themselves are the highest priority of intrinsic evidence, and federal trial judges should first look “to the words of the claims themselves, both asserted and nonasserted, to define the scope of the patented invention.” *Vitronics Corp.*, 90 F.3d at 1582. This is because oftentimes “the claims themselves provide substantial guidance as to the meaning of particular claim terms.” *Phillips*, 415 F.3d at 1314. For example, “the context in which a term is used in the asserted claim can be highly instructive.” *Id.*

Furthermore, “[o]ther claims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment as to the meaning of a claim term.” *Id.* (citing *Vitronics Corp.*, 90 F.3d at 1582). For instance, “[b]ecause claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims.” *Phillips*, 415 F.3d at 1314–15. Conversely, “[d]ifferences among claims can also be a useful guide in understanding the meaning of particular claim terms.” *Id.* For example, “the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.” *Id.* (citing *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 910 (Fed. Cir. 2004)).

#### **b. The Specification.**

Next, although federal trial judges must begin by reviewing the “claims themselves,” the “[c]laims must always be read in the light of the specification.” *See In re Fout*, 675 F.2d 297, 300 (C.C.P.A. 1982).

As a matter of law, the specification is the “written description of the invention.” 35 U.S.C. § 112(a). For this reason, “the specification is always highly relevant to the claim construction analysis.” *Vitronics Corp.*, 90 F.3d at 1582 (“Usually, [the specification] is dispositive; it is the single best guide to the meaning of a disputed term.”). Accordingly, the specification is accorded deference in claim construction, because it is the patentee’s statement to the public describing the invention. *See Honeywell Int’l, Inc. v. ITT Indus., Inc.*, 452 F.3d 1312, 1318 (Fed. Cir. 2006) (“[T]he public is entitled to take the patentee at his word[.]”). In fact, where the claim language is ambiguous, the “specification, including the inventors’ statutorily-required written description of the invention[] is the primary source for determining claim meaning.” *Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1255 (Fed. Cir. 2010); *see also Astrazeneca AB, Aktiebolaget Hassle, KBI-E, Inc. v. Mut. Pharm. Co.*, 384 F.3d 1333, 1337

(Fed. Cir. 2004). Of course, the utility of the specification depends on whether the “written description of the invention [is] . . . clear and complete enough to enable those of ordinary skill in the art to make and use it.” *Liquid Dynamics Corp. v. Vaughan Co.*, 355 F.3d 1361, 1367 (Fed. Cir. 2004).

The specification is particularly important in two circumstances. The first circumstance is where the specification includes a “special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess.” *Akamai Techs., Inc. v. Limelight Networks, Inc.*, 805 F.3d 1368, 1375 (Fed. Cir. 2015), cert. denied, 136 S. Ct. 1661 (2016) (quoting *Phillips*, 415 F.3d at 1316); *see also Edwards Lifesciences LLC v. Cook, Inc.*, 582 F.3d 1322, 1329 (Fed. Cir. 2009) (stating where two terms are used interchangeably, it “is akin to a definition equating the two”). Therefore, “a patentee can act as his own lexicographer to specifically define terms of a claim contrary to their ordinary meaning.” *Process Control Corp. v. Hydrexclaim Corp.*, 190 F.3d 1350, 1357 (Fed. Cir. 1999); *see also Boss Control, Inc. v. Bombardier Inc.*, 410 F.3d 1372, 1377 (Fed. Cir. 2005) (holding that, in ascertaining the scope of the patent, deference should be afforded claims as defined by their “customary meaning,” with the caveat that the law affords patentees the right to serve as “lexicographers,” if a special or unique definition is clearly stated in the specifications or prosecution history). In such a case, however, “the written description . . . must clearly redefine a claim term ‘so as to put a reasonable competitor or one reasonably skilled in the art on notice that the patentee intended to so redefine that claim term.’” *Elekta Instrument S.A. v. O.U.R. Scientific Int'l, Inc.*, 214 F.3d 1302, 1307 (Fed. Cir. 2000) (quoting *Process Control Corp.*, 190 F.3d at 1357).

The second circumstance is where the specification “may reveal an intentional disclaimer, or disavowal, of claim scope by the inventor.” *Openwave Sys., Inc. v. Apple Inc.*, 808 F.3d 509, 513 (Fed. Cir. 2015) (quoting *Phillips*, 415 F.3d at 1316); *see also CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366–67 (Fed. Cir. 2002) (holding that “a claim term will not carry its ordinary meaning if the intrinsic evidence shows that the patentee distinguished that term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment as important to the invention.”). Again, however, “any such disclaimer ‘must be clear’” to overcome the customary meaning of a disputed claim term. *See Voda v. Cordis Corp.*, 536 F.3d 1311, 1320 (Fed. Cir. 2008) (quoting *Conoco, Inc. v. Energy & Env'tl. Int'l, L.C.*, 460 F.3d 1349, 1357 (Fed. Cir. 2006)).

Three additional rules of construction related to the specification also require consideration. First, federal trial judges have been advised not to construe a claim to exclude a preferred embodiment disclosed in a specification, because “such an interpretation is rarely, if ever, correct.” *Vitronics Corp.*, 90 F.3d at 1583 (citing *Hoechst Celanese Corp. v. BP Chemicals Ltd.*, 78 F.3d 1575, 1581 (Fed. Cir. 1996) (“We share the district court's view that it is unlikely that an inventor would define the invention in a way that excluded the preferred embodiment, or that persons of skill in this field would read the specification in such a way.”)).

Second, when more than one embodiment is disclosed, as a matter of law, the court “do[es] not interpret claim terms in a way that excludes disclosed examples in the

specification.” *Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.2d 1295, 1305 (Fed. Cir. 2007) (cautioning against interpreting a claim term in a way that excludes disclosed embodiments when that term has multiple ordinary meanings consistent with the intrinsic record); *see also Phillips*, 415 F.3d at 1323 (recognizing that the embodiments in a patent often are examples intended to teach a person of ordinary skill in the art how to make and use the invention, but should not be construed to limit the invention only to a specific embodiment). But, where a claim term must be interpreted in a manner inconsistent with its ordinary meaning in order to cover all of the disclosed embodiments, and the applicant has not acted as his own lexicographer to “alter the ordinary meaning of the term,” such a term may be interpreted to claim less than all of the embodiments. *See Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1383 (Fed. Cir. 2008) (holding that, the term “partially” should not be interpreted inconsistent with its ordinary meaning to include “totally” in order to encompass all of the disclosed embodiments unless the applicant had acted as his own lexicographer to alter the term’s ordinary meaning); *see also Baran v. Med. Device Tech., Inc.*, 616 F.3d 1309, 1315–16 (Fed. Cir. 2010) (holding that, if a term is used in the specification to differentiate between disclosed embodiments, and the term is used in a claim invention, it is proper to construe the claim to cover only some of the disclosed embodiments, because the differentiation concedes coverage of only certain embodiments).

Third, although the specification is important in discerning the meaning of the claims, federal trial judges must not “import” or graft limitations from the specification into the claim. *See Am. Piledriving Equip., Inc. v. Geoquip, Inc.*, 637 F.3d 1324, 1331 (Fed. Cir. 2011) (reaffirming that “the role of a [federal trial judge] in construing claims is not to redefine claim recitations or to read limitations into the claim to obviate factual questions of infringement and validity but rather to give meaning to the limitations actually contained in the claims, informed by the written description, the prosecution history[,] if in evidence, and any relevant extrinsic evidence”); *Kara Tech. Inc. v. Stamps.com Inc.*, 582 F.3d 1341, 1348 (Fed. Cir. 2009) (“The patentee is entitled to the full scope of his claims, and we will not limit him to his preferred embodiment or import a limitation from the specification into the claims.”); *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1340 (Fed. Cir. 2001) (characterizing importing limitations from the specification into the claims as “one of the cardinal sins of patent law”); *DSW, Inc. v. Shoe Pavilion, Inc.*, 537 F.3d 1342, 1347 (Fed. Cir. 2008) (holding that “[federal trial judges] cannot alter what the patentee has chosen to claim as his invention, that limitations appearing in the specification will not be read into claims, and that interpreting what is meant by a word in a claim is not to be confused with adding an extraneous limitation appearing in the specification, which is improper”) (internal quotation marks omitted).

### **c. The Prosecution History.**

As the final form of intrinsic evidence, “the prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.” *Phillips*, 415 F.3d at 1317; *see also Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335, 1344 (Fed. Cir. 1998) (observing that the prosecution history “may contain contemporaneous exchanges between

the patent applicant and the [USPTO] about what the claims mean”); *Graham*, 383 U.S. at 33 (“It is, of course, well settled that an invention is construed not only in the light of the claims, but also with reference to the file wrapper or prosecution history in the Patent Office.”).

Under certain circumstances, the prosecution history can even trump the specification. See *Graham*, 383 U.S. at 33–34 (holding that claims that were narrowed to overcome prior art during prosecution may not subsequently be interpreted by the specification to cover subject matter that was disclaimed before the USPTO); see also *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 733–34 (2002) (“When . . . the patentee originally claimed the subject matter alleged to infringe but then narrowed the claim in response to a rejection, he may not argue that the surrendered territory compromised unforeseen subject matter that should be deemed equivalent to the literal claims of the issued patent.”). For example, prosecution history may preclude “a patentee from regaining, through litigation, coverage of subject matter relinquished during prosecution of the application for the patent.” *Id.* at 734. In sum, regardless of whether an examiner agreed with an applicant’s statements during prosecution, any argument made “may lead to a disavowal of claim scope[.]” *Microsoft Corp. v. Multi-Tech Systems, Inc.*, 357 F.3d 1340, 1350 (Fed. Cir. 2004) (“We have stated on numerous occasions that a patentee’s statements during prosecution, whether relied on by the examiner or not, are relevant to claim interpretation.”).

### **3. A Federal Trial Judge May Examine Extrinsic Evidence, But Only In Limited Circumstances.**

Finally, as the United States Supreme Court acknowledged, “[i]n some cases . . . the [federal trial] court will need to look beyond the patent’s intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period.” *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S.Ct. 831, 841 (2015). But, if the court’s consideration of the intrinsic evidence resolves all “genuine ambiguit[ies]” about the meaning of a patent claim, as a matter of law, it is improper for the judge to rely on extrinsic evidence, i.e., evidence outside of the patent record, such as expert and inventor testimony, dictionaries, learned treatises, and articles. See *Vitronics Corp.*, 90 F.3d at 1584 (“Only if there were still some genuine ambiguity in the claims, after consideration of all available intrinsic evidence, should the trial court have resorted to extrinsic evidence . . .”). The United States Court of Appeals for the Federal Circuit addressed this issue in *Key Pharmaceuticals v. Hercon Laboratories Corporation*, 161 F.3d 709 (Fed. Cir. 1998):

This court has made strong cautionary statements on the proper use of extrinsic evidence, which might be misread by some members of the bar as restricting a trial court’s ability to hear such evidence. We intend no such thing. To the contrary, trial courts generally can hear expert testimony for background and education on the technology implicated by the presented claim construction issues, and trial courts have broad discretion in this regard.

Furthermore, a trial court is quite correct in hearing and relying on expert testimony on an ultimate claim construction question in cases in which the intrinsic evidence (*i.e.*, the patent and its file history—the “patent record”) does not answer the question.

What is disapproved of is an attempt to use extrinsic evidence to arrive at a claim construction that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history, in other words, with the written record of the patent.

*Id.* at 716 (citations omitted); *see also* *Zodiac Pool Care, Inc. v. Hoffinger Indus., Inc.*, 206 F.3d 1408, 1414 (Fed. Cir. 2000) (cautioning federal trial judges to “turn[] to extrinsic evidence only when the intrinsic evidence is insufficient to establish the clear meaning of the asserted claim”).

#### **IV. THE COURT’S CONSTRUCTION OF CERTAIN PATENT CLAIMS TERMS REQUESTED BY THE PARTIES.**

##### **A. United States Patent No. 7,032,492.**

The parties have requested that the court construe certain terms in claim 1, a process claim<sup>3</sup> of the ’492 patent, (’492 patent, col. 9, ll. 59–col. 10, ll. 12).

###### **1. Claim 1.**

Claim 1 of the ’492 patent describes:

A process for manufacturing an ammunition article, comprising:

- a) providing a cartridge including a projectile disposed in a casing and presenting a joint between the projectile and casing;
- b) applying to the joint a sealingly effective amount of a light curable sealant composition (i) is not capillary active at the joint, (ii) has a viscosity in a range from about 75 to 1000 centipoise at 25 °C, and (iii) is UV-curable in exposure to ultraviolet radiation, curingly effective-light therefor, within a time period of from about 0.01 to about 0.5 second, wherein a force of between 45 and 200 pounds is required to be applied to separate projectile from said casing after

---

<sup>3</sup> “Process Claims—Prior art device anticipates a claimed process if the device carries out the process during normal operation.” MANUAL OF PATENT EXAMINING PROCEDURE (“MPEP”) § 2112.02 (9th ed. Nov. 2015); *see also Joy Techs., Inc. v. Flakt, Inc.*, 6 F.3d 770, 773 (Fed. Cir. 1993) (“[P]rocess claims . . . are infringed only when the process is used.”).

- cure of the light-curable sealant composition, and wherein the light curable sealant composition is not anaerobically curing; and
- c) exposing the applied sealant composition to curingly effective light comprising said UV radiation for a time period of about 0.01 to about 0.5 second.

'492 patent, col. 9, ll. 59–col. 10, ll. 12.

## B. Construction Of The Disputed Terms.

### 1. “A Joint Between The Projectile And The Casing.”

The parties proposed the following competing constructions of the term “a joint between the projectile and the casing” for the court’s consideration:

'492 Patent		
Term(s)	Plaintiff’s Proposed Construction	The Government’s Proposed Construction
“a joint between the projectile and the casing”	No construction necessary.	“the immediate circumferential intersection forming a line or seam between (1) the bullet and (2) the distal end opening of the casing, which does not extend down the interior neck of the casing toward the shoulder”
Claim 1(a)	In the alternative, “the interface or seam where the bullet is inserted into the end of the casing”	

#### a. Plaintiff’s Proposed Construction.

Plaintiff proposes that since the term “a joint between the projectile and the casing” is the interface between the bullet and the casing, it does not require any construction. Pl. Br. at 12. In the alternative, the claim should be construed as “the interface or seam where the bullet is inserted into the end of the casing.” Pl. Br. at 12. In support of this construction, the specification states:

[A]n assemble ammunition article having a joint at the intersection of the surface bounding the distal opening of the casing and the immediately adjacent side surface of the projectile. This joint between the *contacting surfaces* thus forms an interface of the projectile and casing in the assembled ammunition article, and such joint extends circumferentially about the projectile and casing at their intersection.

'492 patent, col. 4, ll. 3–12 (emphasis added).

Therefore, although the sealant is applied around the upper edge of the joint, the joint itself extends into the casing along the neck, where the side surface of the bullet and the inside neck surface of the casing touch each other. Pl. Br. at 13. Contact between two surfaces is a surface, not a line. Pl. Br. at 13.

In addition, anyone skilled in the art would know the shape and location of the joint that is in contact with the bullet and casing, without any need for a description of “joint” between the two objects. Pl. Resp. Br. at 4.

#### **b. The Government’s Proposed Construction.**

The Government asks the court to construe “a joint between the projectile and the casing” as “the immediate circumferential intersection forming a line or seam between (1) the bullet and (2) the distal end opening of the casing, which does not extend down the interior neck of the casing toward the shoulder.” Gov’t Br. at 13. Plaintiff’s proposed claim construction for “a joint between the projectile and the casing” erroneously expands the scope of the term beyond the clear meaning in the specification. In addition, other intrinsic evidence equates the claimed “joint” with “interface,” “line,” and “seam,” since the prosecution history reflects that:

The manufacture of an ammunition article ***in accordance with the present invention*** involves engaging a projectile with a casing . . . Such engagement is carried out ***to position the projectile in the opening at the distal end of the casing***, and form an assembled ammunition article having ***a joint at the intersection*** of the surface bounding the distal opening of the casing and the immediately adjacent side surface of the projectile. This joint between the contacting surfaces thus forms an interface of the projectile and casing in the assembled ammunition article, ***and such joint extends circumferentially*** about the projectile and casing at their intersection.

'492 patent, col. 4, ll. 1–12 (emphasis added and bolded).

According to the applicant of the '492 patent (“Applicant”), the joint is a “circumferential[]” “intersection” between the bullet and “the distal end of the casing.” '492 patent, col. 4, ll. 1–12. During prosecution, however, the Applicant asserted that the location of the “projectile/casing interface joint” should be narrowly construed to disclose the manufacture ammunition using a UV-light curable adhesive. Pl. Br. Ex. 2 at 153–54 (8/22/05 Office Action Resp.); *see also* Pl. Br. Ex. 2 at 262–70 (Klein reference).

During the claim construction hearing to distinguish the '492 patent from the Klein prior art, Plaintiff also advised the court that:

Because the neck of the casing has some height to it, the bullet . . . contacts the inside edge of that neck along some distance. ***The joint is not the entire contact between the bullet and the neck of the casing; it is just where the***

*edge* of the—what we’re calling the distal end of the opening, which is just the top part of the [neck], where that hole, on its edge, *contacts the bullet*.

3/17/17 Tr. at 35, ll. 24–Tr. 36, ll. 7 (emphasis added). These representations, however, were not disclosed to the USPTO Examiner.

Nevertheless, these representations were consistent with the Government’s suggested construction that the court must construe a joint between the projectile and the casing “not extend down the interior neck of the casing towards the shoulder” of the casing. Gov’t Br. at 17.

### c. The Court’s Resolution.

Plaintiff proposes that the term “a joint between the projectile and casing” does not require construction, because a POSITA would understand its meaning without need for further description. Pl. Resp. Br. at 3–4. In the alternative, however, Plaintiff proposes that “a joint between the projectile and the casing” means “the interface or seam where the bullet is inserted into and the casing.” In addition, Plaintiff argues that the joint extends into the casing along the neck.

During the claim construction hearing, however, counsel for Plaintiff stated that:

[b]ecause the neck of the casing has some height to it, the bullet, which is the copper—the solid copper insert into the hollow casing, contacts the inside edge of that neck along some distance. *The joint is not the entire contact between the bullet and the neck of the casing; it is just where the edge of the—what we’re calling the distal end opening, which is just the top part of that mech, where that hole, on its edge, contacts the bullet*.

3/17/17 Tr. at 35, ll. 24–Tr. 36, ll. 7 (emphasis added).

As a matter of law, Plaintiff’s counsel’s statements are binding on Plaintiff. See *Oscanyan v. Arms Co.*, 103 U.S. 261, 263–64 (1880) (holding counsel’s statement during a trial binding on client); see also *Jones v. Morehead*, 68 U.S. 155, 165 (1835) (holding that a client is bound by his counsel’s statements, despite evidence to the contrary); *Nat’l Ass’n of Life Underwriters, Inc. v. C.I.R.*, 30 F.3d 1526, 1530 (D.C. Cir. 1994) (holding that a party is bound by prior admission, despite later evidence that is contrary to prior admissions).

In this case, after reviewing the intrinsic evidence of the ’492 patent, including the claims, the written description, and the prosecution history, and Plaintiff’s counsel’s statement, the court has determined that the term “a joint between the projectile and the casing” means “the point where the circumferential edge of the distal end opening of the casing contacts the bullet after the bullet is inserted into the casing, but does not extend down the interior neck of the casing.”

## 2. “Not Capillarily Active At The Joint.”

The parties proposed the following competing constructions of the phrase “not capillarily active at the joint,” for the court’s consideration:

'492 Patent		
Term(s)	Plaintiff’s Proposed Construction	The Government’s Proposed Construction
“not capillarily active at the joint”	“the sealant does not enter the munition through the joint by capillary action”	“does not penetrate by wicking past the joint”
Claim 1(b)(i)		

### a. Plaintiff’s Proposed Construction.

Plaintiff proposes that the phrase “not capillarily active at the joint” should be construed as, “the sealant does not enter the munition through the joint by capillary action.” Pl. Br. at 16. This construction is evident from the patent and prosecution history that states:

Viscosity of the sealant formulations in the broad practice of the invention can be at any suitable level consistent with effective usage of the sealant formulation. In general, the viscosity should not be so low as to allow the sealant liquid to penetrate through the projectile/casing interface into the interior casing compartment by capillary action, and the viscosity should not be so high as to make application of the sealant to the joint of the ammunition article impractical.

It therefore is abundantly clear that “non-capillarily active” in reference to the applied sealant means that the sealant does not penetrate into the interior casing compartment by capillary action.

It is also apparent that an applied sealant that does not penetrate into the interior casing compartment by capillary action is “capillarily active.”

Pl. Br. Ex. 2, at 105–06 (2/18/04 Office Action Resp.).

In this case, the specification of the ’492 patent discloses that, if the sealant comes in contact with the gun powder, the sealant would interfere with both the desired homogeneous character and firing of the powder charge, and the sealant would be

deposited in the weapon during firing and would not ignite. '492 patent, col. 1, ll. 60–65. The invention, however, is based on a discovery that the interface between the projectile and casing of the ammunition article can be efficiently sealed ('492 patent, col. 3, ll. 31–40), and the viscosity of the sealant formulation in the practice of the invention can be at any suitable level, so long as it is consistent with usage of the sealant formulation ('492 patent, col. 6, ll. 43–45).

In the alternative, Plaintiff will accept the Government's construction, "the sealant does not penetrate into the interior casing compartment by wicking." Pl. Resp. Br. at 5. The specification and prosecution history explain that "'penetration into the interior of the casing compartment' is the measure of capillary action, not just some insubstantial 'wicking past the joint.'" Pl. Resp. Br. at 6. If "joint," however, is defined as the "entire area where the bullet and the interior neck of the casing touch," then "wicking past the joint" means "into the interior compartment of the casing." Pl. Resp. Br. at 6.

#### **b. The Government's Proposed Construction.**

The Government asks the court to construe "not capillarily active at the joint," as "does not penetrate by wicking past the joint." Gov't Br. at 17. During prosecution of the '492 patent, the Applicant repeatedly used the term "wicking" to describe the movement of sealant through capillary action, past the joint line. Gov't Br. at 18. Examples of this include, when the Applicant explained to the USPTO Examiner that "the anaerobic sealant taught by [the Brede '386 patent] cures on application by virtue its **wicking action** into the joint, **as a capillary active sealant** which then is exposed to anaerobic conditions in the joint." Pl. Br. Ex. 2, at 67 (8/13/04 Office Action Resp.) (emphasis added), and by applying the teaching of the Brede '386 patent, "the **capillary or wicking** action at the joint obviates the need for any movement between the applicator and the ammunition article." Pl. Br. Ex. 2, at 65 (8/13/04 Office Action Resp.) (emphasis added).

The Government's construction of the disputed term should be adopted, because the prosecution history teaches the claim language by describing how the inventor understood the invention at the time of filing. In addition, Plaintiff's proposed construction is too broad. Gov't Br. at 19. Plaintiff's proposed construction only prohibits sealants that move by capillary action through the joint **and** into the munition. Gov't Br. at 19. Therefore, it necessarily includes prior art subject matter surrendered during prosecution. Gov't Br. at 19.

In addition, because "wicking" and "capillary action" were considered to be synonymous by the Applicant during prosecution and Plaintiff's proposed construction is too broad, the Government's construction of the disputed term should be adopted.

#### **c. The Court's Resolution.**

Plaintiff proposes that "not capillarily active at the joint" means "the sealant does not enter the munition through the joint by capillary action"; the Government proposes that "not capillarily active at the joint" means "does not penetrate by wicking past the joint." During prosecution, the Applicant informed the USPTO Examiner that:

It therefore is abundantly clear that “non- capillary active” in reference to the applied sealant means that the sealant does not penetrate into the interior casing compartment by capillary action.

It also is apparent that an applied sealant that does penetrate into the interior casing compartment by capillary action is “capillary active.”

Pl. Br. Ex. 2 at 106 (2/18/05 Office Action Resp.).

During prosecution, the Applicant also used the terms “wicking” and “capillary active” synonymously. For example, the Applicant stated “by applying a capillary active anaerobic sealant as taught by Brede, the capillary or wicking action at the joint obviated the need for any movement between the applicator and the ammunition article” (Pl. Br. Ex. 2 at 65), and “[t]his is apparent from the fact that the anaerobic sealant taught by Brede cures on application by virtue of its wicking action into the joints, as a capillary active sealant which then is exposed to anaerobic conditions in the joint” (Pl. Br. Ex. 2 at 67 (8/13/04 Office Action Resp.)).

Therefore, after reviewing the intrinsic evidence of the ’492 patent, including the claims, the written description, and the prosecution history, the court has determined that a person of ordinary skill in the art of munitions manufacturing would understand the term “not capillary active at the joint” to mean “the sealant does not penetrate into the interior of the casing compartment by capillary action or wicking.”

### **3. “Not Anaerobically Curing.”**

The parties proposed the following competing constructions of the term “not anaerobically curing” for the court’s consideration:

<b>’492 Patent</b>		
<b>Term(s)</b>	<b>Plaintiff’s Proposed Construction</b>	<b>The Government’s Proposed Construction</b>
“not anaerobically curing” Claim 1(b)(iii)	“The curing step used in the process does not require the removal of air. This step does not exclude the use of a sealant which could be anaerobically cured.”	“does not cure in the absence of air/oxygen, and is devoid of components or materials that will cure in the absence of air/oxygen”

**a. Plaintiff's Proposed Construction.**

Plaintiff proposes that the term “not anaerobically curing” should be construed as “[t]he curing step used in the process does not require the removal of air. This step does not exclude the use of a sealant which could be anaerobically cured.” Pl. Br. at 20. The term “not anaerobically curing” is both a process claim and a process limitation. As such, the “not anaerobically curing” limitation does not modify the sealant, but the process step of curing. Pl. Br. at 20. Therefore, “anaerobically curing” means the active removal of air to effect a curing process. In contrast, “not anaerobically curing” is a process that does not require the removal of air to cure. Pl. Resp. Br. at 8.

Contrary to the Government’s assertions, Plaintiff did not distinguish claim 1(b)(iii) of the ’492 patent from the Brede ’386 patent on the basis that the claims are “devoid” of any “anaerobically curing” sealants or components. Pl. Resp. Br. at 8. Nor did Plaintiff distinguish the fact that one needs to remove all components or materials that could be anaerobically curable to address the deficiency in the Brede ’386 patent. Pl. Br. at 21. In fact, contrary to the Government’s assertions, the ’492 patent specification teaches that the UV curable sealant can have anaerobic components, but it is preferred that the sealant has none. ’492 patent, col. 5, ll. 30–34 (“The light-curable sealant employed in the general practice of the invention can be any suitable type. Preferably, the light-curable sealant composition is devoid of anaerobic sealing component(s).”).

Therefore, because of the inherent meaning of term “anaerobically curing” and misrepresentations of the Government, the court should adopt Plaintiff’s construction of the disputed term “not anaerobically curing.”

**b. The Government’s Proposed Construction.**

The Government asks the court to construe “not anaerobically curing” as “does not cure in the absence of air/oxygen, and is devoid of components or materials that will cure in the absence of air/oxygen.” Gov’t Br. at 23. During prosecution of the ’492 patent, the Applicant distinguished the claims in the ’492 patent from the prior art, on the grounds that the ’492 patent was “devoid” of any “anaerobically curing” sealants or components thereof. Gov’t Br. at 24. Specifically, the Applicant asserted that Brede teaches away from use of light-curing sealants by specific direction to use anaerobic sealants.” Pl. Br. Ex. 2, at 65 (8/13/04 Office Action Resp.). Therefore, based on this intrinsic evidence, the term “not anaerobically curing” means that the claimed sealant composition “does not cure in the absence of air/oxygen, and is devoid of components or materials that will cure in the absence of air/oxygen.” Gov’t Br. at 24–25.

The Government’s proposed construction is also consistent with the extrinsic evidence. Gov’t Br. at 25. Under the ASTM International Guidelines,<sup>4</sup> an “an anaerobic

---

<sup>4</sup> ASTM International “is one of the largest voluntary standards developing organizations in the world. [It is] a not-for-profit organization that provides a forum for the development and publication of international voluntary consensus standards for

adhesive” is defined as one “kept in the uncured state by oxygen” and “cures in the absence of oxygen when exposed to metal ions, especially copper or iron.” Pl. Br. Ex. 2, at 284 (ASTM Stand.). Consequently, any sealant classified as an “anaerobic adhesive” cannot be classified as a sealant that is “not anaerobically” curable. Gov’t Br. at 25.

**c. The Court’s Resolution.**

Plaintiff proposes that “not anaerobically curing” means “the curing step used in the process does not require the removal of air. This step does not exclude the use of a sealant which could be anaerobically cured.” Pl. Br. at 8-9. Plaintiff further argues that the “not anaerobically curing” limitation does not modify the sealant, only the process step of curing, and sealants devoid of anaerobic sealing component included in the specification are only included as a preferred method. Pl. Br. at 20; Pl. Resp. Br. at 9. The court disagrees with Plaintiff’s construction.

During prosecution, the Applicant stated that:

[A]naerobic adhesives behave inconsistently. They can solidify during application, resulting in the total loss of costly processing equipment. Due to differences in manufacturing equipment, processing speeds, process temperature conditions and metals, gaps between cartridges and projectiles are rarely identical. As a result of this structural variation, anaerobic adhesives do not seal with a uniform degree of adhesion. Occasionally the bond of the projectile to the cartridge is too strong, causing the weapon to explode. When relatively large gaps occur the presence of oxygen can prevent the cure of the anaerobic adhesive, resulting in an unprotected cartridge.

The foregoing discussion reflects the failure of the art to satisfactorily address and resolve the problem of sealing ammunition articles[.]

’492 patent, col. 2, ll. 33–47.

In addition, during prosecution, the Applicant represented to the USPTO Examiner that the Brede ’386 patent in requiring “the sealant to be (i) anaerobically hardening, (ii) contain no solvent, and (iii) be capillarily-active[,]” teaches away<sup>5</sup> from the ’492 patent application. Pl. Br. Ex. 2 at 61–62 (8/13/04 Office Action Resp.).

---

materials, products, systems and services.” ASTM INTERNATIONAL, <http://www.astm.org/ABOUT/faqs.html#what> (last visited Aug. 4, 2017).

<sup>5</sup> A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant . . . [or] if it suggests that the line of

Therefore, after reviewing the intrinsic evidence of the '492 patent, including the claims, the written description, and the prosecution history, the court has determined that a person of ordinary skill in the art of munitions manufacturing would understand the term "not anaerobically curing" to mean "excludes anaerobically curing and devoid of anaerobically curing components."

**V. CONCLUSION.**

For the reasons discussed herein, the court has determined that the disputed claims are to be construed, pursuant to this Memorandum Opinion And Order Construing Certain Claims of United States Patent No. 7,032,492.

**IT IS SO ORDERED.**

s/ Susan G. Braden  
**SUSAN G. BRADEN**  
**Chief Judge**

---

development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant.

*Tec Air, Inc. v. Denso Mfg. Michigan Inc.*, 192 F.3d 1353, 1360 (Fed. Cir. 1999) (internal citations omitted).

**COURT APPENDIX:**  
**THE TERMS OF CERTAIN PATENT CLAIMS AGREED BY THE PARTIES**

The parties agree to the following constructions with respect to United States Patent No. 7,032,492.

Term(s)	Parties' Proposed Construction
<b>“a projectile disposed in a casing”</b> (Claim 1(a))	“a bullet is mounted in the opening at the distal end of the casing”
<b>“applying to the joint”</b> (Claim 1(b))	“externally applying sealant onto the entire surface of the joint”
<b>“a sealingly effective amount”</b> (Claim 1(b))	“an amount of sealant that is sufficient to achieve a moisture barrier”
<b>“light-curable sealant composition”</b> (Claim 1(b))	“sealant that cures to make the moisture barrier upon exposure to light”
<b>“viscosity in a range from about 75 to 1000 centipoise at 25 °C”</b> (Claim 1(b)(ii))	“viscosity in a range from approximately 75 to 1000 centipoise at 25 °C, to prevent the sealant from being capillary active at the joint”
<b>“wherein a force of between 45 and 200 pounds is required to be applied to separate said projectile from said casing”</b> Claim 1(c)	“wherein a force of between 45 and 200 pounds is required to be applied to separate said projectile from said casing”

<b>“curingly effective light comprising said UV radiation”</b>  (Claim 1(c))	“an amount of ultraviolet-radiation (UV) light sufficient to cure and make the moisture barrier”
<b>“after exposure to a curingly effective actinic radiation, does not fluoresce”</b>  (Claim 11)	“after curing, does not subsequently emit light upon exposure to an appropriate secondary ration or light source”
<b>“neat”</b>  (Claim 19)	“solvent-free”